

February 1, 2006



U.S. Department
of Transportation

400 Seventh Street, S.W.
Washington, D.C. 20590

**Pipeline and
Hazardous Materials
Safety Administration**

DOT-SP 7731
(ELEVENTH REVISION)

EXPIRATION DATE: December 31, 2009

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Chart Industries, Inc.
Storage Systems Division
New Prague, MN
2. PURPOSE AND LIMITATIONS:
 - a. This Special permit authorizes the manufacture, mark, sale and use of super-insulated portable tanks for use in the transportation in commerce of certain Division 2.2 gases. This Special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in development of this Special permit only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.203(a) in that marking the Special permit number on the shipping paper is waived; and §§ 173.318, 173.320, 176.30, 176.76(g) and 177.840 in that a non-DOT specification portable tank is not authorized except as specified herein.
5. BASIS: This Special permit is based on the application of Chart Industries, Inc. dated December 12, 2005, submitted in accordance with § 107.109.

February 1, 2006

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

| Proper Shipping Name/ Hazardous Material Description | Hazard Class/ Division | Identi- fication Number | Packing Group |
|--|------------------------------|-------------------------------|------------------|
| Helium, refrigerated liquid (<i>cryogenic liquid</i>) | 2.2 | UN1963 | N/A |
| Nitrogen, refrigerated liquid (<i>cryogenic liquid</i>) | 2.2 | UN1977 | N/A |

7. SAFETY CONTROL MEASURES: Packaging prescribed is a non-DOT specification portable tank designed and constructed in accordance with Section VIII of the ASME Code and subparagraphs a or b of this paragraph. The portable tank is enclosed in an ISO type frame. The portable tank is vacuum-insulated with a supplemental liquid nitrogen shield. Design pressure is 90 psig, 65 psig or 63 psig for the internal tank. Design temperature is -452 degrees F., for the inner tank and any part, valve or fitting that may come in contact with the lading; and -320 degrees F., for the liquid nitrogen tank and any part, valve of fitting that may come in contact with liquid nitrogen. Water capacity is 11,000 gallons nominal for the inner tank. Tank material is SA 240 Type 304 stainless steel for the inner tank and for the nitrogen tank; and SA 36 or ASTM A 283 or equivalent steel for the outer jacket.

a. Each portable tank must conform to the drawings, calculations and design data shown below, on file with the Office of Hazardous Materials Special permits and Approvals (OHMSPA). No new construction is authorized unless the design conforms with subparagraph 7.b. of this Special permit.

| | | | |
|-------------------------------------|-----------------------------------|-----------------------------------|---------|
| Design Pressure (MAWP) | 90 PSIG | 63 PSIG | 65 PSIG |
| General Arrangement | L-13428 | L-13428 | D-26904 |
| Frame Assembly | L-13560 | L-13560 | D-26790 |
| Nitrogen Tank | L-13651, L-16487 or D-16488 | L-13651, L-16487 or D-16488 | D-26582 |
| Inner, Outer and Shield Assembly | D-16256 or L-13567 | D-16256 or L-13567 | D-26763 |
| Inner Tank Assembly | D-18056 | D-15927 | D-26426 |

February 1, 2006Inner tank and
Shield Assembly

D-16500

D-16500

D-26763

b. New construction after July 31, 1987, must conform with the design data in paragraph 7.a. and § 178.338 except as follows.

- (1) Impact testing is not required.
- (2) Section 178.338-10 does not apply.
- (3) The portable tank need not conform with § 178.338-13(b) and (c). Lifting lugs, framework and any anchoring to the inner tank, the nitrogen shield tank or the tank jacket must conform with § 178.338-13(a). A portable tank that meets the definition of "container" must meet the requirements of 49 CFR Parts 450 thru 453, and each design must be qualified in accordance with § 178.270-13(c).
- (4) "DOT-SP 7731" must replace the mark "MC 338".

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this Special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this Special permit.

b. A person who is not a holder of this Special permit, but receives a package covered by this Special permit, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this Special permit and the HMR.

c. A current copy of this Special permit must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this Special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

February 1, 2006

e. A current copy of this Special permit must be maintained at each facility where the package is manufactured under this Special permit. It must be made available to a DOT representative upon request.

f. Each portable tank must be reinspected and retested at a pressure of 14.7 psig plus one and one-fourth times the sum of the design pressure plus the static head, once every 5 years in accordance with § 173.32(e) as prescribed for DOT 51 specification portable tanks.

g. Each portable tank must be plainly marked on both sides near the middle in letters at least 2 inches high on a contrasting background, "DOT-SP 7731".

h. Each portable tank must be prepared and shipped as required in § 173.318, as applicable for the lading.

i. Shipments by cargo vessel must conform with the following:

(1) The package must conform with § 176.76(h). The portable tank may not be overstowed with other containers or freight.

(2) The legend "One-Way Travel Time (or OWTT) _____ Hours" must be marked on the shipping paper and on the dangerous cargo manifest immediately after the container description. The OWTT is determined by the formula:

$$\text{OWTT} = \text{MRHT} - 24 \text{ hours.}$$

(3) A written record of the portable tank's pressure and ambient (outside) temperature at the following times must be prepared for each shipment.

(i) At the start of each trip;

(ii) Immediately before and after any manual venting;

(iii) At least every 24 hours; and

(iv) At the destination point.

(4) Any lading road relief valve set at a pressure lower than that prescribed for the (safety) pressure relief valve must be closed during transportation by cargo vessel.

February 1, 2006

- j. No person may transport a charged portable tank unless the pressure of the lading is equal to or less than that used to determine the marked rated holding time and the OWTT is equal to or greater than the elapsed time between the start and termination of travel.
- k. The actual holding time for each tank must be determined after each shipment. If it is determined that the actual holding time is less than 90 percent of the MRHT of the tank, the tank may not be refilled until it is restored to its MRHT or the tank is remarked with the reduced holding time determined by this examination.
- l. Packages permanently marked 'DOT-E 7731', prior to October 1, 2007 may continue to be used under this special permit for the remaining service life the package or until the special permit is no longer valid. Packages marked after October 1, 2007 must be marked 'DOT-SP 7731'.
9. MODES OF TRANSPORTATION AUTHORIZED: Cargo vessel and motor vehicle.
10. MODAL REQUIREMENTS: A current copy of this Special permit must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this Special permit.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

February 1, 2006

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term 'exemption' to 'special permit' and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.



for Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: AM/kah